YAMAHA Power User

PLG150-PF TUTORIAL

PLG150-PF Professional Piano Board

The **PLG150-PF** is a single part plug-in board. It contains 136 preset Voices and is a part of the Modular Synthesis Plug-in System. The board has 16 megabytes of new sampled data and offers the highest quality Voices available. The samples here were specifically selected and painstakingly matched to work in these Voices. (Please make sure you have loaded the special Voice data into memory when you are auditioning this board).

PLG150 series boards can be used in Modular Synthesis Plug-in System products like the S30/S80 and CS6 synthesizers and can also be used in certain XG system products like the SW1000XG/p and the MU128 and above series of tone modules. When referring to the manual always look for the type of product being described. If you have an S30/S80/CS6 only refer to sections on the Modular Synthesis system.

Included with your S/CS synthesizer was a CD-ROM with XGworks Lite v3.0 Music Sequencing Software. A special software plug-in module for XGworks, called "PF EASY EDITOR", is included on the diskette that comes with the PLG150-PF. It can be used to customize some of the PF settings (actually offsets to the stored data). Edits made with the PF Easy Editor can be stored separately or inserted into song data to automate sound changes.

Checking Installation

Check to make sure your board or boards are properly installed. Here's how:

- On the host: Press [UTILITY]
- Use the MENU feature ([SHIFT]+PAGE) or the PAGE knob to navigate to the PLG Status screen:

```
▲▼PLG Status> PLG1:PLG150-AN    Expand
  Plugin      PLG2:PLG150-PF    ▶----
```

Figure 1: Your screen may differ according to what boards you have plugged into which slots. The "Expand" parameter will be active only when you have 2 boards of the *same* type installed and polyphony expansion is possible. A second PLG150-PF will give you a maximum of 128 notes of PF polyphony in Expand poly mode. Because the System is **modular**, this polyphony **does not** take away from the 64-note polyphony of the mothership host (S30 / S80 / CS6x / CS6R).

Banks of sounds

Each PLG150 series board comes with special "Plug-In Voice" data – these files are typically **.mid** files that bulk in 64 factory Voices. Load the Plug-in Voices that come with the PLG150-PF. On the diskette find the appropriate file: "**01PlgV1.mid**" or "**01PlgV2.mid**" depending on whether your board is in slot 1 or slot 2. Playing this file to the S30/80-CS6 synth will bulk the **Plug-In Voice** data to the 64 PLG locations associated with the board. They are listed in the PLG150-PF Owner's Manual on page 29. You can back up these files to a SmartMedia card once you have loaded them. If you receive the TYPE MISMATCH error message you have played the wrong numbered file for this PLG. A type mismatch means the Voice data did not find the appropriate board in the slot. The PLG150-PF must be in the unit to be addressed by the voicing parameters. You cannot use the Voices separate from the PLG board. The first sound should be: **(A01):001[StrchGndPf]** and should have a Reverb Send on KN 1 (knob 1). If you have another name or there is no Reverb send on KN1, please load the proper file to your synth.

What is a Plug-in Voice and what is a Board Voice?

The **Plug-in Voices** are found from the front panel of the host S/CS synth under the [PLG1] and [PLG2] buttons, when you have a PLG board properly installed. The host can store 64 Plug-in Voices per board (A01-D16). The PLG150-PF comes with a disk file that will load 64 **Plug-In Voices** to your synth. They integrate the Voice with the mothership's controllers and effects but call on sample data resident on the board, called the **Board Voices**. Instead of using ROM samples from the host, the PLG Voices point to completed multi-element samples that are

resident on the PLG board. The PF Board Voices are arranged in various banks.

Sixty-four Plug-In Voices can be made from the 128 preset Voices provided on the PLG150-PF. Plug-In Voices are Board Voices that have been integrated into the mothership's setup and are stored in either bank [PLG1] or [PLG2], depending on which one contains your PLG150-PF. The board must be physically in the slot with the proper data loaded in order to play the Plug-in Voices. The Modular Synthesis Plug-in System will let you create your own customized user controller setups. It is possible to customize the knobs, pedals, wheels, aftertouch, etc., to help you with performing each sound. Take your time and play through these sounds. And when you are ready to explore deeper come back to this spot.

Let's look under the hood and see where these 64 Plug-in Voices sounds come from:

- Press [VOICE]; then the [PLG] button for your PLG150-PF board.
- Select sound A01 (001); StrchGrdPf
- Press [EDIT]
- Navigate to the "OSC Assign – Element" page. Hold [SHIFT] + turn PAGE and select "Elem: **OSC**" or you can use KN A to select ELEM and then use the PAGE Knob to select OSC Assign. Or the keyboard shortcut: Touch Program button [9]

It is important to realize that although this page is called the OSCILLATOR ASSIGN *Element* page, you are actually selecting completed multi-element AWM2 Voices, not single elements. These multi-element Voices are on the PLG150-PF board. More on this in a moment...

▼OSC Assign	Bank	Number
Elem	▸**032/000**	1[StGrndPSt]

The PF board has several banks of sounds as follows:
PLG bank = INT 64 locations;
Bank = **032/000** -- 128 preset **Board Voices**

When using the PF board in an XG scenario, there are various extension banks, these are:
Bank = PF/XG A 080/000; 080/064 thru 080/105
Bank = PF/XG B 096/000; 096/064 thru 096/099

The two numbers represent MSB/LSB for bank select – (MSB and LSB Bank Select numbers are used to facilitate remote changes from a device like a sequencer).

As you may know, GM divides instruments into 16 categories - 8 sounds in each. Obviously, the PF board only has sounds in the PF category: Piano, Bright Piano, Electric Grand Piano, Honky Tonk Piano, Electric Piano 1 (Rhodes-type), Electric Piano 2 (DX-type), Harpsichord, and Clavinet. The Extension banks arrange the sounds so that they can be used as substitutes in the GM/XG Voice and program change slots. They are the same board voices just arranged for convenience when selecting via the GM/XG voice map. In other words, even though there are many banks, the sounds will only occupy the first 8 program changes of the GM program list.

If you are using an S80/30 or CS6x/R, for example, as the host for the PLG150-PF you need only concern yourself with the **032/000** bank – where the 128 sounds are listed from 1-128. (Hey, how come the brochure says 136 Voices?) – There are 8 sounds that are used in an XG module principal bank. They are the 8 basic 'Pf' category GM sounds: Grand Piano, Brite Piano, CP Grand, Honky Tonk, EP1, EP2, Harpsichord and Clav.

From the OSC Assign page use Knob 2 to recall the different sounds from the PLG150-PF board. As you play through these different sounds you will hear that some of them have effect processing on them, some are obviously more than a single element and all are completed sounds. (Very unlike when we did the same thing on the PLG150-AN DX, and VL boards – where the sounds were single element). The other 3 PLG150-series boards each represents a different synthesis technology: **AN** – analog physical modeling, **VL** – Virtual Acoustic physical modeling and **DX** – Frequency Modulation synthesis. The PF board is based on AWM2 sample playback technology. While with the other boards we were accessing mathematical equations or 6-operator tone structures, here we are accessing completed sample playback waveforms. An important point is, the other boards are a single element by the design of the technology. The PLG150-PF board is different.

In fact, the architecture of the PLG150-PF board is very similar to the S80/S30/CS6 itself. Both have up 4 to Elements per Voice, both have a reverb, chorus and insertion effects and they both have 64 notes of polyphony. The PF150-PF is just like a little S80 on a board! But it is dedicated to just piano category sounds. You are looking at a little preset synth within your synth. As you explore the PLG150-PF you will see that you cannot edit every parameter of the individual

elements on the Board from the current PF EASY EDITOR. The Easy Editor only allows you to tweak the EQ and some very basic parameters, like effect amounts. Currently, there is no PF Expert Editor. You are locked out of extremely in depth editing on the PLG150-PF board.

Why is there a PLG150-PF board?
In general, the piano, as an instrument, is a hog. It is. No instrument that can go as high, goes as low in range. And vice versa. When it comes to sample playback technology, very few sounds use up as much memory. Pianos in many synths suffer from lack of room in the wave ROM. When a piano has to share the wave memory with five or six hundred other sounds, it is always a compromise as to how much memory gets allocated for the poor piano. Even the S80 with its 24 megabytes of wave ROM does not have enough room for the piano fanatics at Yamaha. The PLG150-PF dedicates 16MB of memory for just the piano category. Now you are getting into the kind of dedicated wave ROM that you find in the Yamaha P-series of professional pianos. The voicing and architecture of this board are concentrated on the reproduction of fine pianos. All the magic and subtleties of the art of sampling can be brought to bare on the wave ROM. Phase-locked, multi-strike pianos that respond to your playing style smoothly and realistically. The PLG150-PF board has some *unique* features like the 'soundboard simulation' that is involved only when the sustain pedal is down. The implementation of the sustenuto pedal (control change #066) - Sostenuto, you know, the center pedal on the piano – the PLG150-PF pianos will respond making serious piano performance possible. Try this: In [UTILITY] set the FS (Foot Switch) to number 066 Sostenuto. Plug a Yamaha FC4 or FC5 pedal in the Foot Switch jack. You can now play an octave in the left hand – step on and hold the pedal – this will latch the 'dampers' for those 'strings', letting them ring while you continue to play without sustain on the subsequent notes. You cannot do Rachmaninoff without sustenuto! Also implemented is the soft pedal function. Assign the FS to control change 67 Soft. Now the pedal will apply a 'deadness' to the 'strings'.

We also know that digitally sampled-pianos sound different when combined in different mixes. Just like a recorded piano in a track has a different personality depending on if it is mixed with electric guitars or violins. You can never have enough quality piano sounds. The voicing of the PLG150-PF is a large part of what you are buying when you get a PLG150-PF board. When you need a specific piano sound for a recording or for a session, you will appreciate the details of this board. When used in a Modular Synthesis System product, you will be able to tweak parameters that have been set up by the original programmer. (You cannot fully edit every parameter of the PLG150-PF Voice). Take a look at the Voice Lists in the PLG150-PF booklet that accompanied your board. You will see a chart (page 24) that indicates what type of Insertion effect (the effect is resident on the PLG150-PF board), if any, has been applied to the Board Voice. This chart also indicates how each effect was programmed and the number of elements in the Voice. If an Insertion effect is applied in the board preset, then and only then, can you edit it. If the Voice does not have a native insertion effect applied, you cannot change that on the board, however, you **can** apply the processors of your S80/30/CS6 to create your desired result (on the COMMON level) as you create a finished Plug-in Voice.

Step – by – Step: How to create a Plug-in Voice from a PLG150-PF Board Voice
Let's use sound Tea (dedicated to the late Richard Tee, legendary NY session player) to learn something about how the PF board works using only on board (S/CS) parameters. Don't be afraid to explore when you are paging through EDIT mode. This Voice features a triple strike (soft-medium-hard) Fender Rhodes sample set. This is generated entirely on the PLG150-PF board. According to the Preset Voice list on page 24 and 25 of the PLG150-PF Owner's Manual: The 'Tea' sound is number **59** and is a **single element** sound (which means only one note of polyphony is used for each note played. The Insertion effect that is applied is a 2-Band EQ.

- From [VOICE] mode select the [PLG] bank that contains your PLG150-PF, [PLG1] or [PLG2]
- Press [JOB] and select the Initialize function. Initialize the current Voice position. Press [ENTER], [INC/YES] to execute.
- Press [EDIT]
- Select the OSC Assign> page – Use the MENU feature to select **'Elem: OSC'**; The MENU can be viewed by holding [SHIFT] while turning the PAGE knob. The one touch Shortcut: touch button [9], then use the PAGE Knob, if necessary.

▼OSC Assign	Bank	Number
Elem	032/000	▸**59[Tea]**

- Using Knob C select Bank 032/000; use Knob 1 to select Program Number = 59[Tea].

- Use the PAGE knob to explore the Element parameter pages; Shortcut: touch buttons [9], [10], [14], [15] to arrive at a single page within that area (like bookmarks).
- Use the PAGE knob or button [15] to select the 'NTV_Param' (Native parameters) page. Native Parameters refers to parameters that address the data on the PLG150-PF board. You are offsetting data that originates on the board. Locate the Element Level parameters – EL1 Level / EL2 Level / EL3 Level/ EL4 Level. Each is set to +00 (you are offsetting the data from its originally programmed values) except EL4 is unavailable '***'.

NTV Param Elem	EL1 Level	EL2 Level
	+00	+00

NTV Param Elem	EL3 Level	EL4 Level
	+00	***

- You can alternately turn down the levels of two of the elements (to –64) and isolate each one in turn. By doing so you will discover that this sound is made from 3 different element sounds but the elements are velocity limited so that they are set to respond when you strike the key within its range. Only a single element is ever sounding at a time. Obviously the original programmer spend some time getting this crossover just right.
- Call up a different Board Voice on the OSC Assign page and explore its parameters. Board Voice #30 for example, **PnoStPad** – this is a 4-element Board Voice: Stereo piano/stereo pad.
- Try Board Voice #128: PhsDgClv – a one element Voice that has a Phaser as the Insertion Effect type; Notice that you can adjust the LFO speed and depth as NTV (native) Parameters: INS LFO Frequency and INS LFO Depth; You can also control the Feedback and the Wet/Dry balance.
- Use the PAGE knob to move through and view the available parameters.
- Experiment with making edits. You can add S/CS parameters on the **COMMON** level – route controllers, add S80 effects: Reverb, Chorus, and an Insertion. Shortcut to COMMON parameters: touch Program button [1] General. Practice navigating the edit area.
- When you press [STORE] your work will be saved to one of the 64 PLG locations. At this point it becomes a proper Plug-In Voice.

Summary

We learned a few things. The PLG150-PF board is similar in structure to the S30/S80/CS6 synth. The Board Voices are 1 to 4 Elements deep and have their own programming. We also learned that a sound with 3-elements does not always mean that you use 3-notes of polyphony when you strike it – that all depends on how the elements have been velocity or note limited. We also have seen that you can only get at a few of the parameters via the PF EASY EDITOR. We also observed that as you change the Board Voice assigned on the OSC Assign page you may see different NTV_Param (Native Parameters) become available. Each PLF150-PF Board Voice preset will recall the parameters that are available for editing. When we select an 'element' on the OSC Assign page we are selecting more than just that the 'element' (Board Voice), it recalls all of its programming, as well. If a parameter is unavailable you will see "***" instead of a value. Sometimes a parameter will have little or no effect on the sound – if, for example, in the original Voice the volume is set at maximum, you cannot offset it so that it is louder than maximum, and so forth.

What if you want to change the effect assigned? If, for example, we want to add a Chorus, or Phaser or Distortion to the "Tea" Voice and it wasn't originally programmed for this effect, we can't. You cannot change the effect processor algorithm on the PLG150-PF board, but you can route the sound to the internal effect processors of the mother. Simply use the mothership's Insertion Effects found in the COMMON Voice parameter area. You have a Reverb, a Chorus and an Insertion Effect on the Common level. If it's not programmed on the board you can use the mothership's effects.

Prepared by: Phil Clendeninn
Product Marketing Specialist
Digital Musical Instruments
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